



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,178	07/17/2003	Alan R. Popiolkowski	006162 USA P 01/AGS/IBS	2234
Patent Counsel APPLIED MATERIALS, INC. P.O. Box 450A Santa Clara, CA 95052			EXAMINER LEYBOURNE, JAMES J	
			ART UNIT 2881	PAPER NUMBER

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,178

Applicant(s)

POPIOLKOWSKI ET AL.

Examiner

James J. Leybourne

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-34 and 53-55 is/are allowed.
- 6) ☒ Claim(s) 35-39, 41, 43, 45, 46 and 51 is/are rejected.
- 7) ☒ Claim(s) 40, 42, 44, 47-50, 52 and 56 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/14/03, 1/13/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities:

In claim 18, line 2, "the" should be "a" because there is no antecedent for "the texturizing chamber".

Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 US PQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Iann Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 35-38, 45, 46 and 51 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over

claims 51, 69, 94, 95 and 70 of copending Application No. 10/099307. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim a process chamber component for use in a process chamber, comprising: a body having one or more surfaces; and a plurality of features formed on the surfaces, wherein the features have been formed by scanning a beam of electromagnetic energy across a surface of the process chamber component, and wherein the features that are formed are selected from the group consisting of depressions, protuberances, and combinations thereof.

The independent claim 35 of the application corresponds to the independent claim 51, of the copending application and is only slightly different in the wording. Dependent claims 36, 37 and 38 correspond to claims 95, 94 and 69 respectfully of the copending application.

Dependent claims 45, 46 and 51 are anticipated by claim 70 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 35, 36, 38, 39, 41, 43, 45, 46 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dance (USPN 6670571) in view of Banholzer et al. (USPN 5401319).

Dance discloses a method for preparing a surface topography of a workpiece to generate depressions and protuberances in order to increase the degree of mechanical interlock with respect to another material (Fig. 1 and column 1, lines 6-7). He teaches texturizing a steel surface at a pitch of 0.7 mm (column 2, line 8). This corresponds to 14.28 spots per cm. From Fig. 2a, a typical pattern is a regular pattern with horizontal and vertical pitch equal. This would give a spot density of about 204 spots per square cm. Dance also teaches preheating the workpiece (column 3, line 38).

Dance does not teach that texturizing can be applied to a component of a processing chamber and Dance is silent on the form of heater used for preheating. It would be obvious to one of ordinary skill in the art to use the method of Dance to texture the surface of a chamber component, to use conventional heaters such as an inductive or resistive heater and to limit the preheating temperature so that the component being treated does not melt or decompose because, Banholzer et al. teach roughening the surface of a part of a vacuum chamber improves adhesion of deposited material (abstract).

Regarding claim 41, Dance does not teach chemically cleaning surfaces of a process chamber component after they have been bead blasted. Banholzer et al. teach

that a bead blasting step should be followed by an ultrasonic cleaning step to remove all loose particles on the surfaces due to particles remaining from the bead blasting, or minute particles of aluminum, quartz, dust particles and the like (column 3, lines 31-33).

Regarding claim 43, it is well known in the art to clean any components used in a process chamber in order to reduce contamination.

Allowable Subject Matter

6. Claims 1-34 and 53-55 are allowed.
7. The following is an examiner's statement of reasons for allowance:

Regarding independent claims 1 and 18, the prior art fails to disclose or make obvious a method for providing texture to a surface of a component for use in a semiconductor process chamber, comprising the steps of forming a plurality of features on the surface using an electromagnetic beam and roughening the surface and features of the component.

Claims 2-17 and 54 are allowed by virtue of their dependency on claim 1.

Claims 19-34, 53 and 55 are allowed by virtue of their dependency on claim 18.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance"

9. Claims 40, 42, 44, 47-50, 52 and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 40 and 42 would be allowable for the reasons given for claims 1 and 18 above.

Regarding claims 44 and 47-50, the prior art fails to disclose or make obvious a method for providing texture to a surface of a component comprising the steps of forming a plurality of features on the surface using an electromagnetic beam and stress relieving the component either before or after forming the plurality of features.

Although the prior art teaches that pre/post-heat treatments can be employed to control the cooling rate of a metal being texturized using an electron beam (see Dance, column 3, lines 38-39), it does not teach controlling the cooling rate in order to provide stress relief for the component.

Relevant Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haerle et al. (US 20020006766) disclose using bead blasting followed by chemical cleaning to remove a coat of deposited metal from a component.

Kava et al. (USPN 5474649) teach that focusing ring for a plasma processing apparatus can be texturized by any means of surface abrasion including bead blasting and chemical etching.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to James J. Leybourne whose telephone number is (571) 272-2478. The examiner can normally be reached on M-F 9:00- 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 10, 2004

JJL


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800